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PATENT SPECIFICATION

411,428

Convention Date (United States): Oct. 20, 1931.

Application Date (in United Kingdom): Oct. 4, 1932. No. 27,469/32.

Complete Accepted: June 4, 1934.

COMPLETE SPECIFICATION.

Improvements in Sweepers.

I, JEANNETTE FRENCH, a citizen of the United States, of 245, West 107th Street, in the Borough of Manhattan, City, County and State of New York, United States of America, formerly of 3112, Broadway, in the Borough of Manhattan, City, County and State of New York, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to dust and the like receptacles for sweepers and the like surface treating devices having a rotary brush or like cleaning element.

The invention is particularly applicable to a hand propelled device provided with two separate and distinct cleaning implements which may be brushes having different characteristics, one being a relatively stiff brush for sweeping carpets and the like, and the other a soft brush for sweeping hard surfaces; or the treating implements may be of suitable character for polishing, dressing or otherwise treating floors or similar surfaces.

According to this invention there is provided a surface treating machine comprising a casing, a brush or like surface treating implement, rotatably supported by and enclosed within said casing and traction wheels journalled in said casing, said casing presenting an opening in its upper portion one of the edges of said opening being spaced from the adjacent end wall of said casing to define a top portion overhanging said brush, and a dust pan removably insertible within said opening.

Spaced brushes may be rotatably supported in said casing adjacent the end walls thereof, the opposite edges of the opening in the upper portion of the casing being spaced from adjacent end walls of said casing to define top portions overhanging the brushes, and a dust pan removably insertible within said opening to lie between said brushes.

In cleaning or otherwise treating carpets, floors and similar surfaces, it is often desirable to employ different cleaning or treating devices on surfaces of different character, or to employ different cleaning devices successively on the same surface. Thus for sweeping carpets or rugs it may be desirable to employ a fairly stiff brush, whereas for sweeping waxed floors or other surfaces which are apt to be marred by the bristles of a stiff brush it is desirable to employ a relatively soft brush, and according to a further feature of the invention there is provided an improved means embodying a plurality of such sweeping or cleaning devices, each of which may be rendered operative at will while the remaining device or devices are inoperative.

In the embodiment of my invention herein illustrated the invention is shown applied to a sweeper forming the subject of my co-pending Patent Application No. 13,520/34, Serial No. 411,449, the sweeper having two rotary brushes one of which may be a soft brush and one a stiff brush. The sweeper is provided with traction members which may be wheels of the usual type, and means are provided whereby either one of the brushes may be connected with the wheels so as to be operated thereby and at the same time the other brush is disconnected from the wheels and raised from the surface so as to remain idle while the sweeper is moving thereover. The sweeper is provided with the usual long handle to move it over the floor, and as is the practice with this type of sweeper the handle is pivoted to the sweeper body so that, in its operative positions, it may extend from one end or the other of the sweeper body. For the purpose of rendering either brush operative, at will, I mount the brushes in such a manner that when the handle is swung from one end of the sweeper body to the other, one of the brushes is moved downwardly into contact with the floor, and being in engagement with the traction wheels is in a position to be operated thereby when the sweeper is moved over the floor. This same movement of the handle lifts the other brush away from contact with the floor.

The brushes are preferably mounted on parallel axes, in spaced relation with a dust pan between them, and in the pre-

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ferred construction the arrangement is such that the operative brush is always the forward brush of the sweeper.

My improved sweeper structure includes a casing within which two pairs of traction wheels are journalled, while the respective brushes are disposed within the casing near opposite ends thereof, and respectively beyond the pairs of traction wheels, said brushes carrying circular frictional disks that are adapted to be rotated from the traction wheels with which they are associated.

The sweeper handle has a bail which is journalled by pivotal portions thereof in opposite sides of the casing, said pivotal portions carrying disks with which are connected links that themselves are pivoted to bars which each have a bearing for a brush and are slotted to receive the axles of the traction wheels.

Since the disks are secured to the bail pivotal portions the swinging movement of the handle in one direction causes the bars, which use the traction wheel axles as fulcra, to raise the brush at one end of the casing out of contact with the floor surface and to depress the brush at the other end of the casing into operative contact with said surface.

As previously stated a dust or the like receiving box is entered within the casing for service, from the upper surface thereof, the casing having an opening in its top for that purpose. Said box, which preferably has a central partition, is adapted to lie between the brushes and has end openings adjacent the brushes to receive dirt or other matter swept up thereby.

The invention is illustrated in the accompanying drawings wherein:—

Figure 1 is a horizontal sectional view of my improved surface treating device taken on the line 1—1 of Fig. 2.

Fig. 2. is a side sectional view taken on the line 2—2 of Fig. 1.

Fig. 3. is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a side sectional view taken on the line 4—4 of Fig. 1, and

Fig. 5 is an endwise section taken on the line 5—5 of Fig. 4.

In said views let 1 indicate a casing adapted to contain the cleaner mechanism and having pairs of traction wheels 2, 3, which are respectively journalled in bearings 4 provided therefor in said casing, said wheels having the axles 5.

The outer cylindrical faces of the wheels are lined with friction material such as rubber, forming the usual traction tires for the wheels. 6 indicates a handle for the sweeper, which handle is provided at its lower end with a bail or yoke-shaped member 6*a* pivoted in the side walls of the sweeper casing 1 as shown at 7, and 8 represents the the portions of the bail which project inside the casing. Each portion 8 has a collar 9 mounted upon it and secured thereto as by means of a set-screw 10. U-shaped links 11, 12 are pivotally mounted at their upper ends on each disk 13, and said disks are mounted respectively on the projecting portions 8 of the bail and fixed to collars 9. The lower ends of links 11, 12 are pivotally mounted at the inner ends of lever members 14, 15. These lever members have slots 16, 17 by means of which they are mounted upon the axles 5 of the traction wheels 2, 3 and are capable of rocking thereon. The outer ends of the lever members carry bearings in which sweeping brushes 24, 25 are rotatably mounted.

Each of these brushes is formed of a cylindrical core of any suitable material, carrying bristles. The bristles of one of the brushes, as for example brush 24, may be stiff and adapted for cleaning carpets, rugs and rough surfaces generally, while the bristles of the other brush 25 may be soft and adapted for sweeping polished or waxed floors and smooth surfaces generally.

Projecting from the ends of the cores 24*a*, 25*a* of brushes 24, 25, are journals 26, which extend through and are rotatably mounted near the ends of lever members 14, 15, as shown at 27. The bearing 27 is cut away in order to enable the brushes to be removed and replaced easily. Friction wheels 28, 29, made of any suitable material, are secured to the outer ends of the journals 26. The ends 31, 32 of tension springs 30 are secured to the inner ends of lever members 14, 15, and the tension in these springs pulls the lever members inwardly and maintains contact under pressure between the brush friction wheels 28, 29, and the traction wheels 2, 3.

It will thus be seen that by pulling lever members 14 and 15 outwardly, the journals 26 are freed, thereby enabling the brushes to be removed easily from the casing. The extent of the outward movement of the members 14, 15 is limited to the requisite extent by the slots 16, 17 provided therein.

Associated with the brush friction wheels 28, 29, are cams 33, 34 shown fixed to the top of casing 1. In Fig. 2, brush 25 is in inoperative position and cam 34 holds friction wheel 29 out of contact with traction wheel 3.

The operation of my improved sweeper is as follows:

As the handle 6 is swung from one end

of the body 1 to the other disks 13 will be rotated. Referring to Fig. 2, and supposing the handle 6 to be swung from right to left, turning disks 13 with it, then link 12 will be raised and link 11 lowered, thus lowering the inner end of lever member 14, rotating it about the traction wheel axle 5, pressing friction wheel 28 against cam 33, and pulling lever 14 outwardly along the slot 16. In this manner the brush 24 will be raised from the surface and at the same time friction wheel 28 will be moved out of engagement with traction wheel 2, and the brush will therefore remain idle during the operation of the sweeper. Similarly, by the same movement of the handle from right to left, it will be seen that brush 25 will be moved into contact with the surface, and into operative engagement with the traction wheel 3. A reversal of the handle will cause the former brush to be moved into operative position and the latter brush into inoperative position.

A dust pan 35 which can be removed and replaced through the top of the sweeper casing 1, has lips 36 which rest on the top 37 of the casing 1, thereby supporting and holding the said dust pan in position. The dust pan has a bottom portion 38, the ends 39 of which are bent upwardly and inwardly so as to lie near the brushes and direct the dirt into the pan in the sweeping operation. A partition 41 prevents dirt from the operating brush from being thrown against the idle brush. A handle 42 for the dust pan enables the latter to be removed readily from the sweeper casing for emptying. A comb 43 is provided for removing hair and fluff-like material from the stiff brush 24. This brush is shown secured transversely in the dust pan in such position that its teeth engage with the bristles of the brush.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A sweeper or like surface treating machine comprising a casing, a surface treating device such for example as a brush, rotatably supported by and enclosed within said casing and traction wheels journalled in said casing, said casing presenting an opening in its upper portion, one of the edges of said opening being spaced from the adjacent end wall of said casing to define a top portion overhanging said brush, and a dust pan removably insertible within said opening.

2. A sweeper or like surface treating machine comprising a casing, spaced surface treating devices such for example as brushes rotatably supported in said casing, adjacent the end walls thereof, traction wheels journalled in and supporting said casing, said casing presenting an opening in its upper portion, opposite edges of said opening being spaced from adjacent end walls of said casing to define top portions overhanging the surface treating devices, and a dust pan removably insertible within said opening to lie between said surface treating devices.

3. A machine according to claim 2, in which the dust pan comprises a top, a bottom and side walls, and a partition connecting said top and bottom to define a dust receiving compartment for each of the surface treating devices.

Dated this 3rd day of October, 1932.

REGINALD W. BARKER & Co.,
Applicant's Agents,
56, Ludgate Hill, London, E.C. 4.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1934.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1

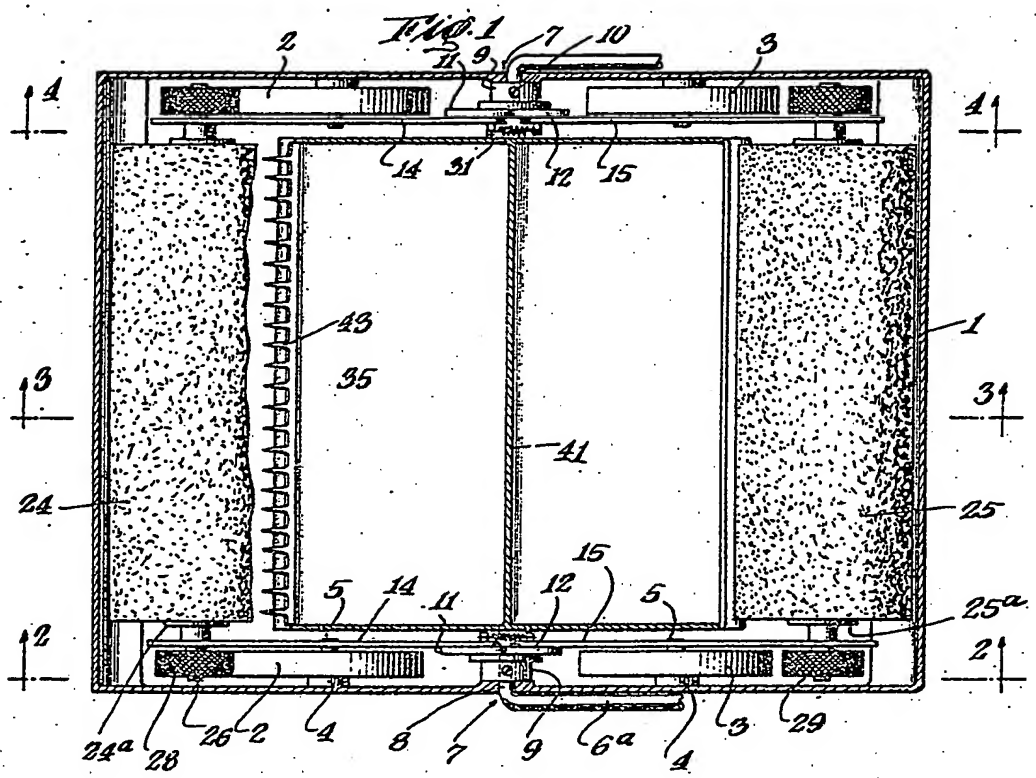

Fig. 2

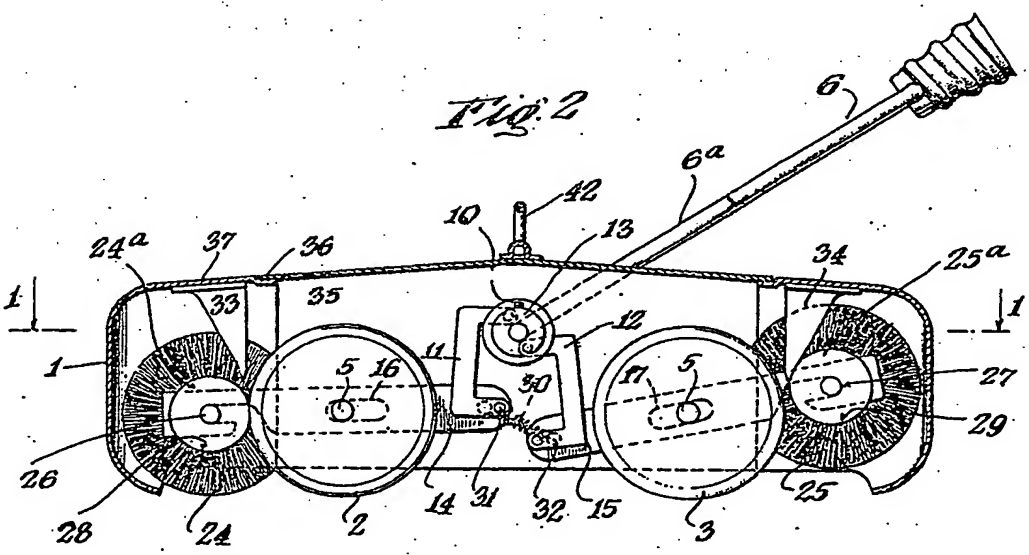

Fig. 3

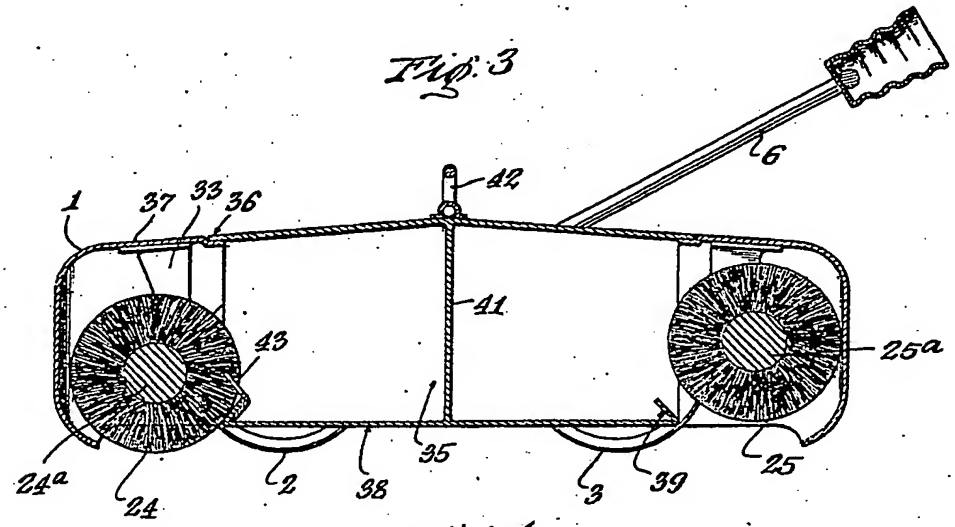

Fig. 4

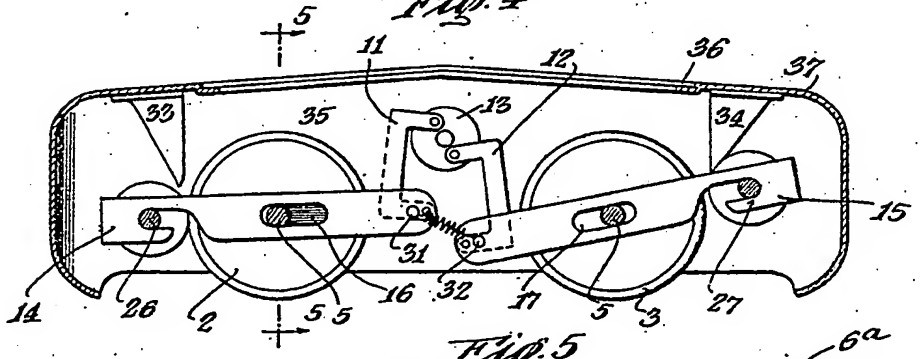

Fig. 5

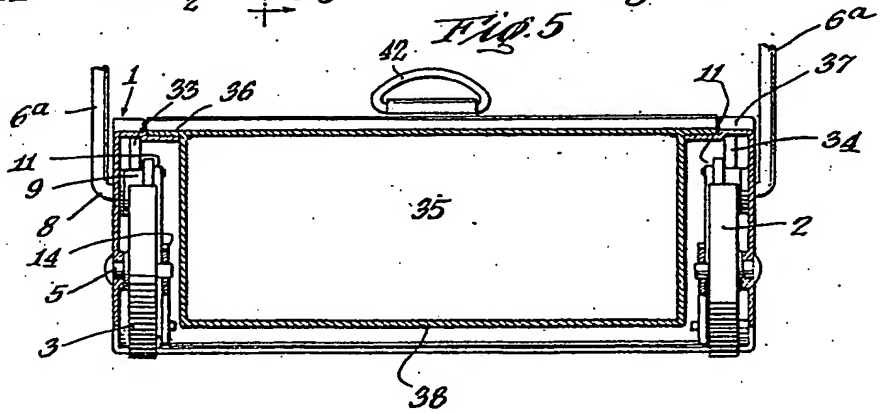

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Fig. 1

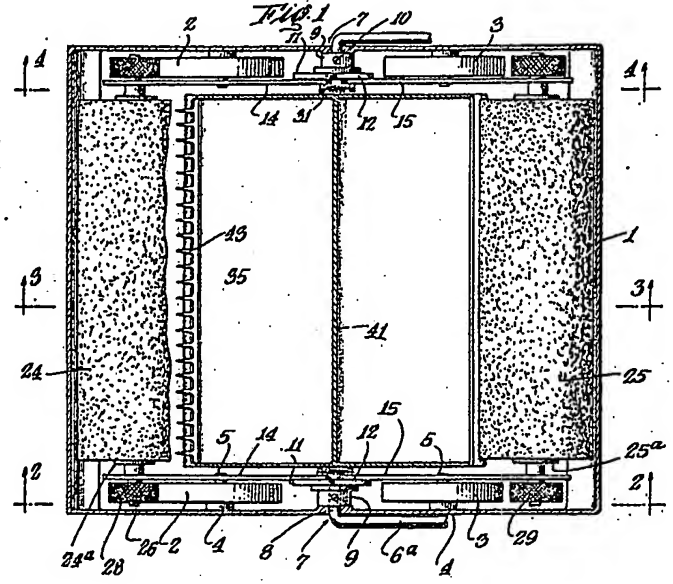


Fig. 2

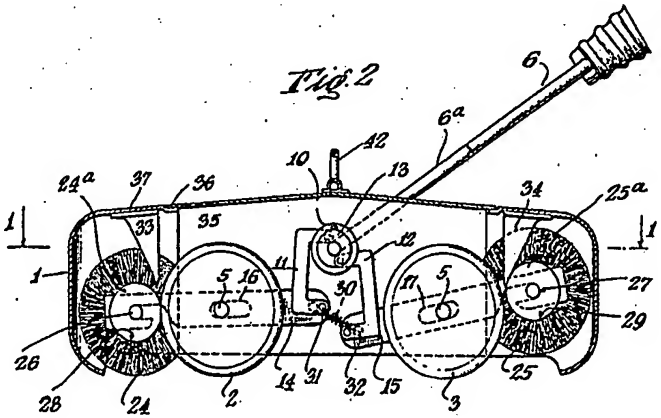


Fig. 3

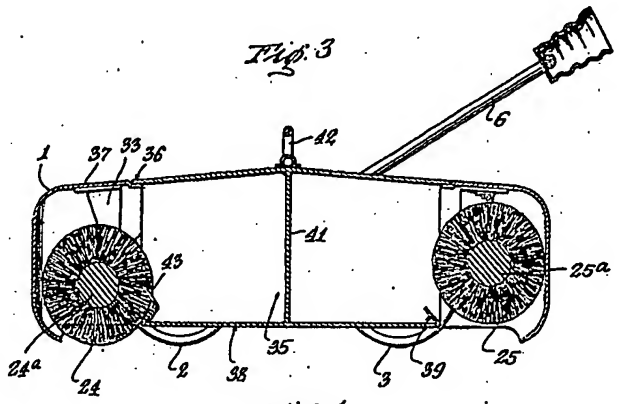


Fig. 4

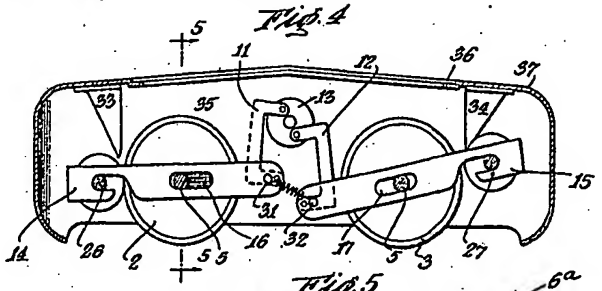
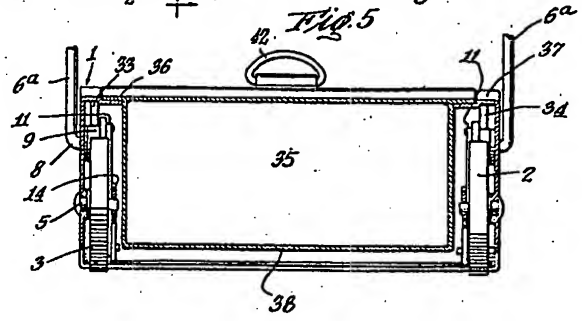


Fig. 5



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